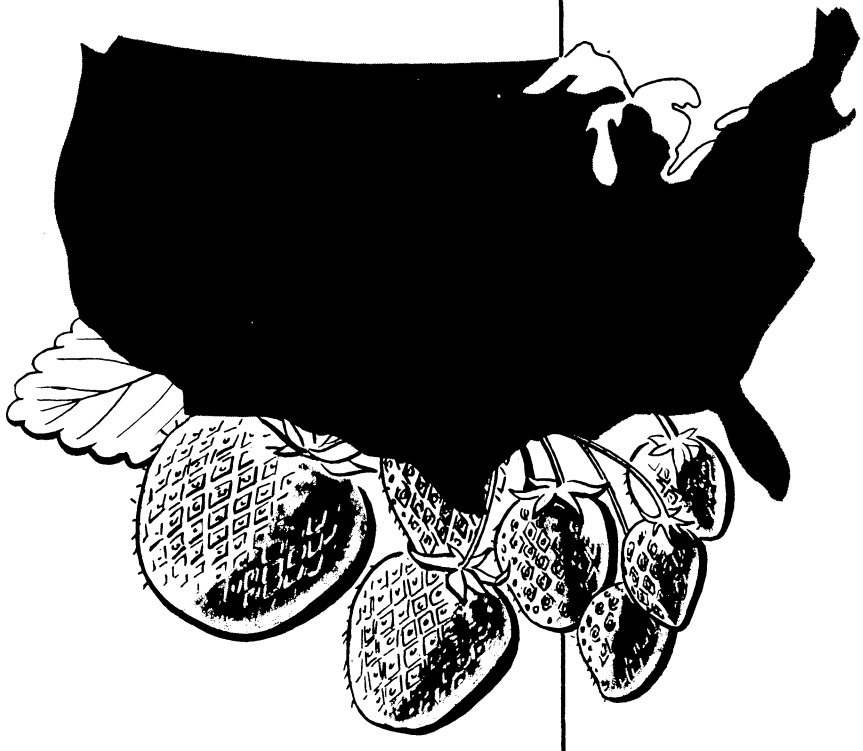
STRAWBERRY VARIETIES

in the UNITED STATES



Farmers' Bulletin No. 1043

U.S. DEPARTMENT OF AGRICULTURE

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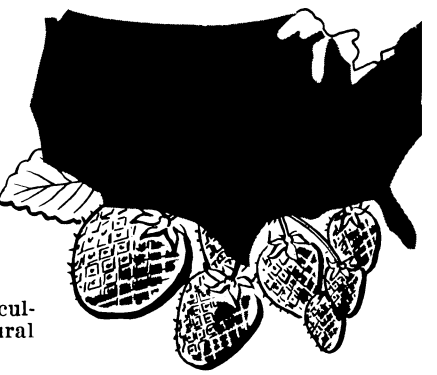


By GEORGE M. DARROW,[1] and D. H. SCOTT, horticulturists, Crops Research Division, Agricultural Research Service

The strawberry is the most widely grown small fruit in the United States. It is grown on a large scale for market in many localities and in home gardens throughout the country. Commercial and home crops have an annual value of about $90 million.

In 1966, 27 main varieties made up about 97 percent of the commercial acreage. They are listed in the order of number of acres planted. Approximate percentage of total acreage for each variety is given.

Variety	*Acreage (percent of total)*	*Introduced*
Northwest	18	1949
Blakemore	14	1929
Midway	8	1959
Shasta	6	1945
Headliner	5	1957
Tennessee Beauty	5	1943
Dixieland	3	1953
Sparkle	3	1942
Catskill	3	1933
Florida Ninety	3	1952
Robinson	3	1948
Surecrop	3	1956
Dabreak	3	1961
Pocahontas	3	1953
Albritton	2	1951
Earlidawn	2	1956
Jerseybelle	2	1955
Siletz	2	1955
Tioga	2	1964
Marshall	1	1890
Howard 17 (Premier)	1	1909
Armore	1	1950
Dunlap	1	1900
Klonmore	1	1940
Goldsmith	1	1958
Fresno	1	1961
Other *	3	

*This includes Empire, Fairfax, Midland, Torrey, Redstar, Solana, and Vermilion.

[1] Retired.

Testing New Varieties

Modern strawberry varieties have been derived mainly from two American species—the wild meadow strawberry [2] of eastern North America and the beach strawberry [3] of the Pacific coast area. In recent years, the western field strawberry,[4] also an American species, has been used in breeding new varieties.

Since about 1920, more than 1,500,000 different seedling varieties have been raised at the Agricultural Research Center of the U.S. Department of Agriculture, Beltsville, Md. Only 30 of these varieties were named—about 1 in 50,000. Other breeders in various parts of the United States also raise large numbers of seedlings.

The best new seedlings are introduced as new varieties, but during extended trials they may show some undesirable qualities.

Therefore, test new varieties before planting them extensively. Plant new varieties beside standard varieties at the same time; give both the same treatment. Discard new

[2] *Fragaria virginiana.*
[3] *F. chiloensis.*
[4] *F. ovalis.*

varieties if they are not equal to standard varieties. Usually, a 2- to 3-year test will allow new varieties to prove their value.

Adaptation to Climate

The interrelation of temperature and length of daylight largely determines how well a variety adapts to a particular area. Environment affects productivity of plants; size, flavor, and firmness of fruit; and development of diseases.

Southern Varieties

Varieties adapted to Southern States need little or no winter rest period. They grow vigorously and form fruit buds freely during the short days and relatively low temperatures of late fall, winter, and early spring. These varieties also can withstand high temperatures during the summer.

Of the southern varieties, Florida Ninety and Missionary require the least rest and cold weather; Blakemore requires the most. Headliner, Dabreak, Albritton, and Earlibelle are adapted to mild winters.

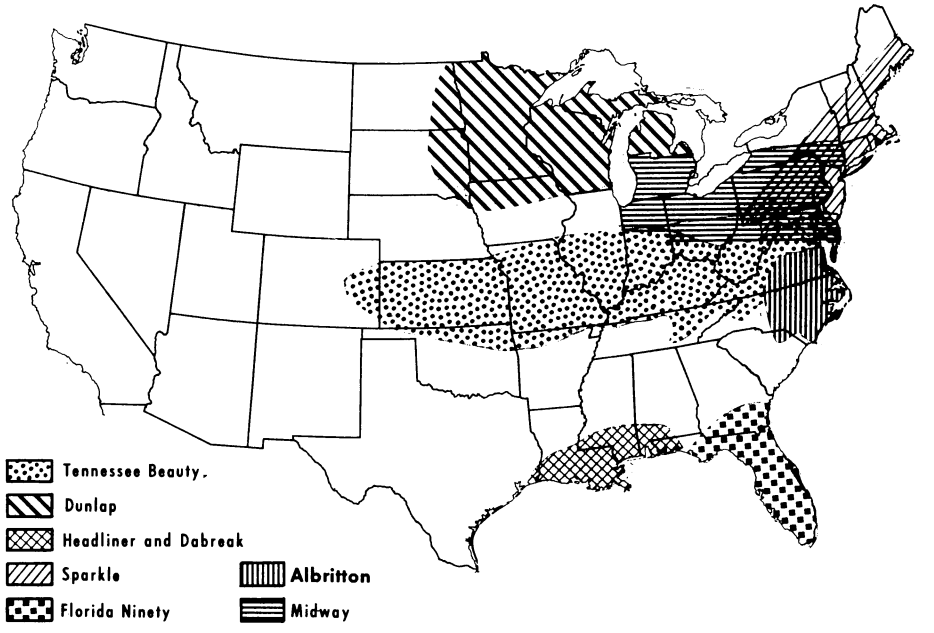
Blakemore is the leading variety in most of the South. However, Florida Ninety leads in Florida, Albritton in eastern North Carolina and southeastern Virginia, and Headliner and Dabreak in Louisiana. Tennessee Beauty and Pocahontas do well from Missouri to Maryland.

Northern Varieties

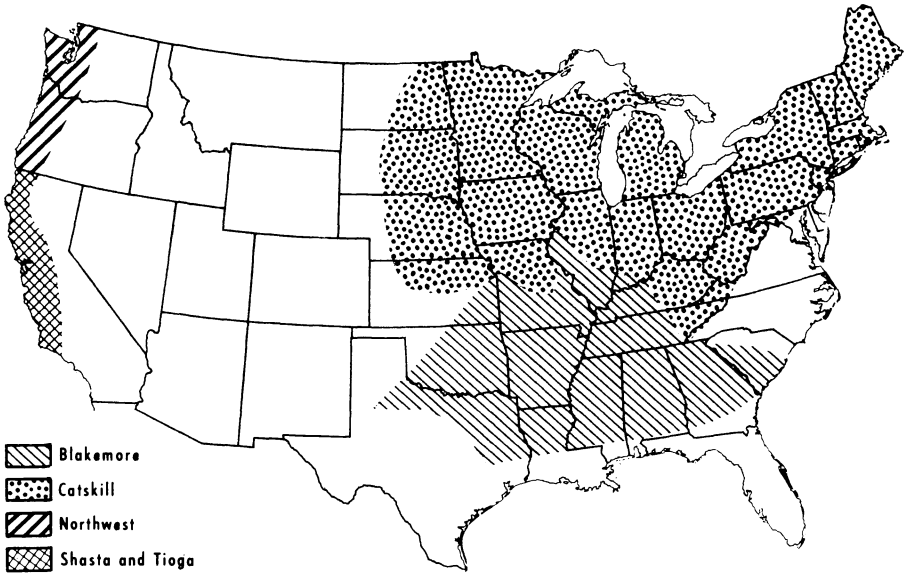
Most northern varieties need a cold rest period. They are dormant or grow very little during short days and low temperatures. Longer days break the rest period of some varieties; temperatures below 45° F. break the rest period of all varieties.

Midway, Sparkle, and Catskill are the most widely grown varieties in Northern States.

Three everbearing varieties bred to withstand the low temperatures



Map shows the regions in which Tennessee Beauty, Dunlap, Headliner, Dabreak, Sparkle, Florida Ninety, Albritton, and Midway are grown profitably.



Map shows the regions in which Blakemore, Catskill, Northwest, Shasta, and Tioga are grown extensively.

of the Great Plains are Arapahoe, Ogallala, and Radiance. These varieties must resist temperatures as low as −40° F. without snow cover. In Montana, Wyoming, and the western parts of North Dakota, South Dakota, and Nebraska, they are the only hardy varieties.

Most varieties cannot withstand the cold, dry winters of the upper Mississippi Valley where Dunlap grows well.

Other climatic conditions, which are not fully understood, limit production of some western varieties in the East and some eastern varieties in the West.

Effect of Temperature

Dessert Quality

Climate and local weather conditions affect dessert quality of strawberry varieties. Dessert quality varies greatly from season to season in the same district; often it improves toward the end of the season.

In New York and New England, Midway develops better quality than in Maryland. Fairfax, Midland, and Sparkle are good dessert varieties when grown in the North.

Flavor

Temperature greatly affects flavor of strawberries. In general, varieties grown where there are sunny days and cool nights have better flavor than those grown where there are cloudy, humid days and warm nights.

Albritton is an exception; it develops high flavor in the warm climate of the ripening season in eastern North Carolina.

Firmness

Most varieties produce firmer fruit in cool temperatures. In New England, New York, and Michigan, Catskill and Sparkle produce a firmer fruit than they do farther south. In Maryland, they are too soft for shipment. During warm, humid weather, they may be impossible to harvest for marketing.

Ripening Season

The ripening season of strawberry varieties is influenced by climate, local weather conditions, exposure, soil, and cultural practices.

Weather affects the length of the ripening season. In cool weather, a variety that ordinarily is early or ripens quickly may be late or have a season extending over several weeks.

In California, largest acreages are near the coast where temperatures are modified by the ocean. Flower buds form normally and plants fruit throughout the summer in cool temperatures of the middle coastal area. Many of the same varieties produce only one crop in other areas. In Massachusetts, Shasta's fruit matures in June; in the central coastal area of California, it begins maturing in April and continues through November.

Varieties may be classified by ripening season as follows:

Very Early:
- Earlidawn
- Midland

Early:
- Blakemore
- Dixieland
- Howard 17 (Premier)
- Florida Ninety
- Pocahontas
- Surecrop

Midseason:
- Fairfax
- Catskill
- Marshall
- Midway
- Shasta

Late Midseason:
- Armore
- Robinson
- Empire
- Northwest

Late:
- Jerseybelle
- Sparkle
- Tennessee Beauty
- Albritton
- Columbia
- Siletz

Very Late:
- Redstar
- Molalla
- Vesper

Frost Injury

Strawberry varieties may escape frost injury if they blossom after most danger from frost has passed or if they have short flower stems and flowers that are under protecting leaves. Varieties that have a long flowering season develop some fruit despite frost.

Earlidawn is damaged less by frost than other standard varieties; its flowers are protected by leaves. Although early, it has a long flowering season and grows relatively large berries from flowers that are not injured by frost. Howard 17 (Premier) is also frost resistant. The flowers of Tennessee Beauty, Sparkle, Armore, and Redstar are late blooming and also are protected by leaves.

Varieties that escape frost more often than most are Pocahontas, Dixieland (second early flowering), and Catskill (midseason).

In the North and West wherever frosts are unusually serious, everbearing strawberries are commonly grown instead of the ordinary spring-fruiting varieties. If their first blossoms are killed, everbearers produce a new set of flower buds.

Vitamin C Content

Fresh strawberries are an excellent source of vitamin C. There is more vitamin C in a cupful of strawberries than in a medium-size orange or half a medium grapefruit.

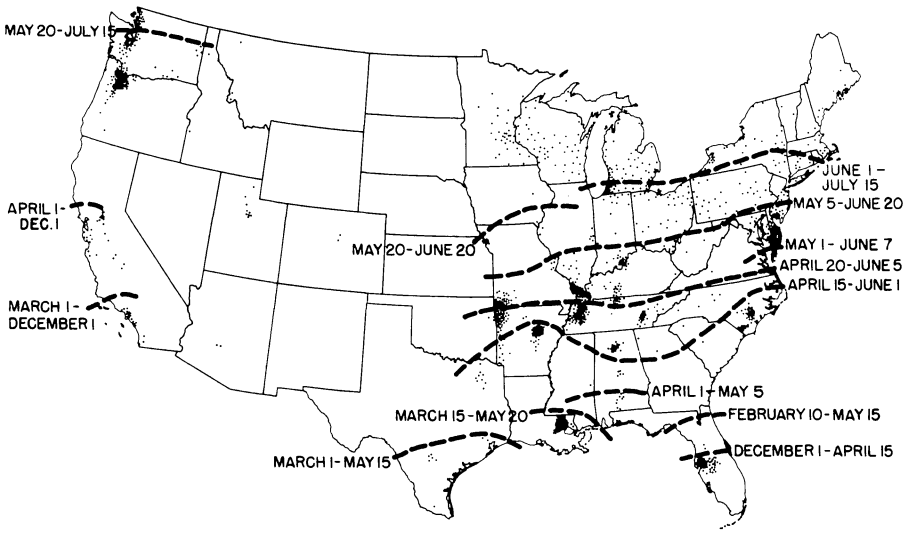
Fresh, high-flavored, undamaged fruit generally contains more vitamin C. Preserving or freezing may destroy 1/6 to 1/2 of the vitamin C content.

All varieties do not contain the same amount. Catskill, Eden, Marshall, and Sparkle are above average and Aberdeen is below average in vitamin C content.

Soil and Moisture

Strawberry varieties respond differently to soil fertility. The amount of moisture the roots of a variety can absorb also determines soil adaptation. On page 8 the great differences in size of root systems and crowns of varieties are shown.

If the soil is fertile and there is ample moisture, varieties such as Blakemore and Robinson may grow so dense that they produce few berries. However, they yield a large



Map shows the location of the principal commercial strawberry-producing regions, the approximate ripening time in each region, and the northward progression of the strawberry season.

crop when runners are removed after a full stand of plants, spaced 9 to 12 inches, have rooted.

Blakemore, Pocahontas, Catskill, and Dunlap are adapted to a wide range of soil types.

Certain varieties, such as Earlidawn, need irrigation as well as fertile soil to produce excellent stands and large, profitable crops.

Excesively dry climates may reduce fruit yields, size, and attractiveness. Marshall is drought-resistant and is grown in higher areas of Oregon and Washington. On elevated, relatively dry sites, it is grown in hill systems or narrow matted rows.

Northwest, which is replacing Marshall, is usually grown in valley sites where moisture is more uniform and irrigation is available.

Fruit Production

Growth Habit

Growth habit of a strawberry variety largely determines its value.

Howard 17 (Premier), Earlidawn, and Dunlap have the best types of growth for Eastern States. Normally, they produce irregular low-branching flower clusters. If the first flowers are killed by frost, later-opening flowers develop large berries. In the South, Headliner has a similar growth habit.

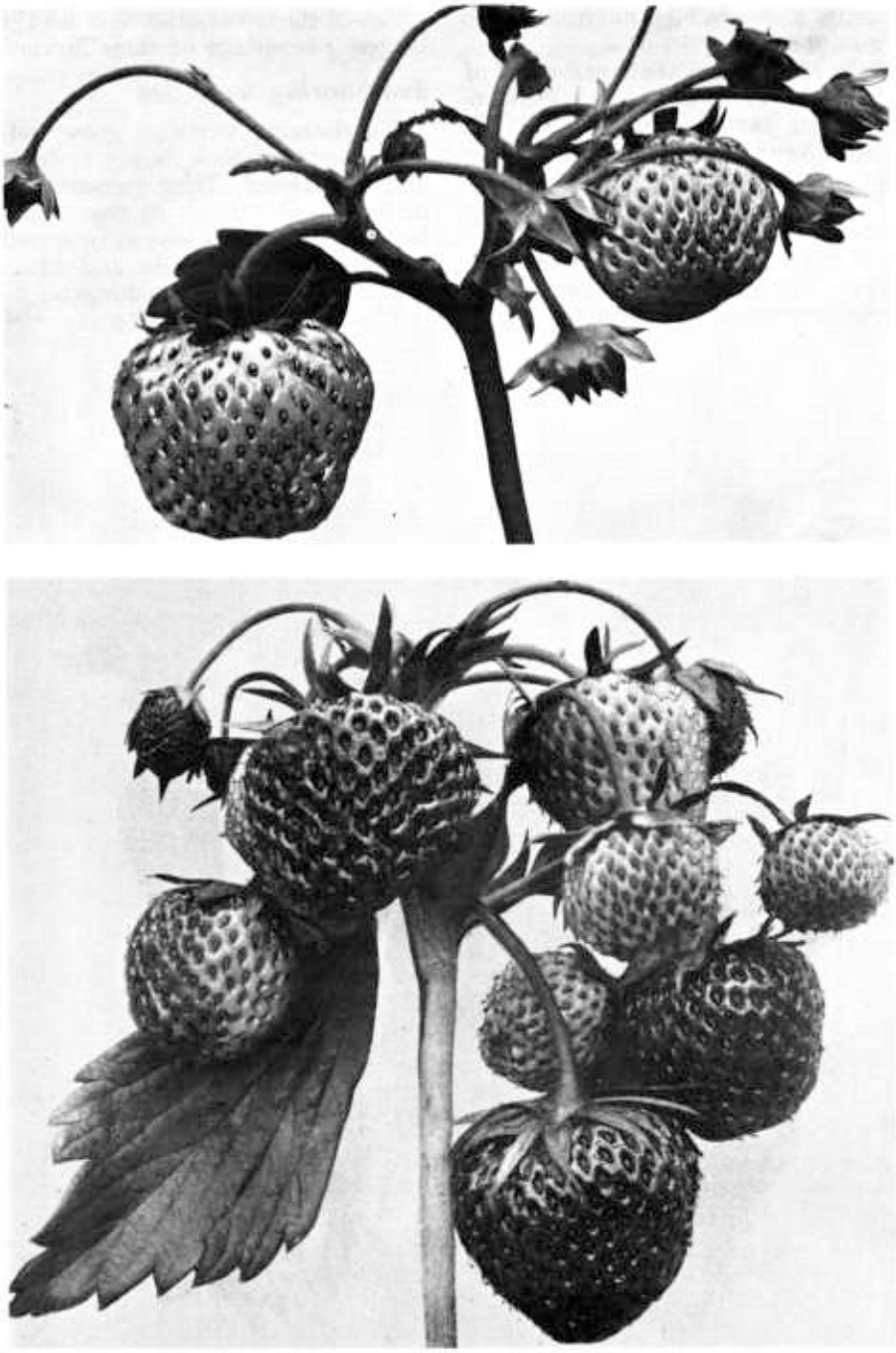
In California, some varieties produce few berries per cluster but the berries are large, and high yields are obtained over a long season.

Florida Ninety bears large fruit in Florida but, grown farther north, has small berries.

Varieties that yield large, showy fruit are Jerseybelle, Albritton, Redglow, Midland, Fairfax, Dixieland, Catskill, Shasta, and Florida Ninety.

Fertility of Varieties

It is unusual for all blossoms of strawberry varieties to set fruit. Rain, frost, disease, and insect injury prevent the setting of some flowers; more important, flowers may appear normal, but have sterile



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Fruit clusters of two perfect-flowered varieties: Top, two flowers have set fruit and several are sterile; bottom, all flowers have set fruit.

pistils and produce nubbins or no fruit at all.

On an average, about one-third of the blossoms of cultivated, perfect-flowered varieties are sterile. The first flower of a cluster to open is more likely to set than later ones. The last flowers to open often are sterile. Early formed runner plants and plants spaced well apart produce fewer sterile flowers than crowded late-season plants.

Select those varieties that set the largest percentage of their flowers.

Everbearing Varieties

Everbearing varieties grow well from northern New Jersey to Iowa and northward. They succeed also at higher elevations in the Appalachian Mountains and in irrigated regions from Colorado and Montana to Oregon and Washington.

The leading everbearing varieties

BN-28992

Blakemore and Surecrop plants show the differences in their crowns and root system. Each bundle contains 25 plants of average size.

are Gem (Superfection, Brilliant) and Ozark Beauty. Arapahoe, Geneva, Ogallala, Radiance, Red Rich, Rockhill, Streamliner, and Twentieth Century are also everbearing varieties.

Resistance to Disease

Foliage Diseases

Leaf diseases are a problem wherever strawberries are grown. They are more destructive in warm, moist areas than in dry areas.

Varieties differ in their resistance. Susceptible varieties such as Marshall and Armore are seriously damaged by leaf diseases when grown in humid areas. Klonmore is resistant to leaf spots but is subject to leaf scorch. Howard 17 (Premier), Fairfax, Albritton, Rockhill, Redstar, Tennessee Beauty, Blakemore, and Midland usually are resistant to leaf diseases. Susceptible varieties can be grown in the Pacific States because the long, dry summers discourage the development of leaf spots.

Virus Diseases

Most varieties become less vigorous and productive over a period of time. Virus diseases cause most of this loss of vigor, or "running out."

Viruses infect the whole plant and all of its runner plants. Some varieties are sensitive and are weakened severely and quickly; others are more tolerant. All varieties are susceptible to virus diseases, and diseased plants do not recover.

Marshall, Catskill, Fairfax, and Midland are sensitive to virus diseases. Northwest, Shasta, Howard 17 (Premier), Blakemore, Siletz, and Tennessee Beauty are highly tolerant. Columbia and Molalla were recently introduced as new tolerant varieties for the Pacific Northwest, and Goldsmith, Solana, and Torrey for California. Virus-free stocks of most varieties are available and are usually far more productive than ordinary stocks.

Root Diseases

Red stele root rot is a major root disease of strawberries from Virginia to California and northward. It severely injures most varieties.

If this disease has appeared in fields with heavy soils or poorly drained sandy soils, grow only resistant varieties. Resistant varieties are Sparkle, Surecrop, Siletz, Columbia, Molalla, Midway, and Sunrise.

All resistant varieties are not resistant to all races of the disease fungus. Siletz and Molalla in western Oregon, and Surecrop and Sunrise in Maryland are resistant to several races.

Another fungus disease, verticillium wilt, affects the roots, crown, and, to some extent, the leaf petioles. Most varieties are susceptible, but Blakemore, Catskill, Robinson, Surecrop, and Wiltguard (grown in California) and Siletz (in Oregon) are highly resistant.

Home Garden Varieties

Choose strawberry varieties for the home garden according to where you live, the size of your garden, and the way you intend to use the berries. Select only one variety for a small garden.

In most of the South, home gardeners grow Blakemore, but in Tennessee, Kentucky, western Virginia, and West Virginia, Tennessee Beauty is preferred. Florida Ninety is grown in Florida, and Headliner in Louisiana, southern Alabama, and Mississippi. Suwannee, the finest of varieties in flavor, is available in virus-free stocks.

Dunlap is considered best for the upper Mississippi Valley, and Catskill and Sparkle are widely grown in most of the North.

In Maryland and Virginia, Midland, Pocahontas, Fairfax, and Redstar are grown for table use; Midland and Pocahontas for preserving and for home freezing.

In western United States, Marshall and Northwest are grown for table use, and for preserving and freezing.

Commercial Varieties

Commercial strawberry production began about 1800 near Boston, New York, Philadelphia, and Baltimore.

The industry spread widely after 1865 with the development of fast transportation, better refrigeration, and improved varieties.

The frozen food industry has made strawberries available throughout the year; they no longer are a seasonal delicacy. Since 1950 about half the crop has been frozen.

Ripening Season

For profitable commercial production, growers must select varieties that ripen when there is market demand. Some varieties produce freely in a particular locality but are commercially undesirable because of their ripening time. Although late varieties produce good crops in parts of the South, they ripen too late to compete for northern markets.

For local market production and home gardens, select varieties that have high quality and a long ripening season, or several varieties that ripen in succession. Near Washington, D.C., Earlidawn, Midland, Pocahontas, and Fairfax are grown for the early market, and Tennessee Beauty and Armore are grown for later sale. However, soils in this area infested with red stele root rot should be planted to Sunrise and Midway.

Varieties for Shipping

Growers use certain varieties for special markets. To ship well, good commercial berries must be firm. If picked when green and immature, the fruit is firm but graded lower in appearance and general quality. Overripe berries usually are soft, moldy, or decayed when they reach the consumer.

Albritton, Dixieland, Blakemore, Headliner, Tennessee Beauty, Florida Ninety (from Florida), and Shasta (from California) are the best varieties for shipping to distant markets if they are adapted to the region in which they are grown.

Varieties for Preserves and Ice Cream

Varieties for preserves should be easy to hull (cap), medium in size, and firm. They should have high flavor and light bright-red color that does not turn dark after preserving.

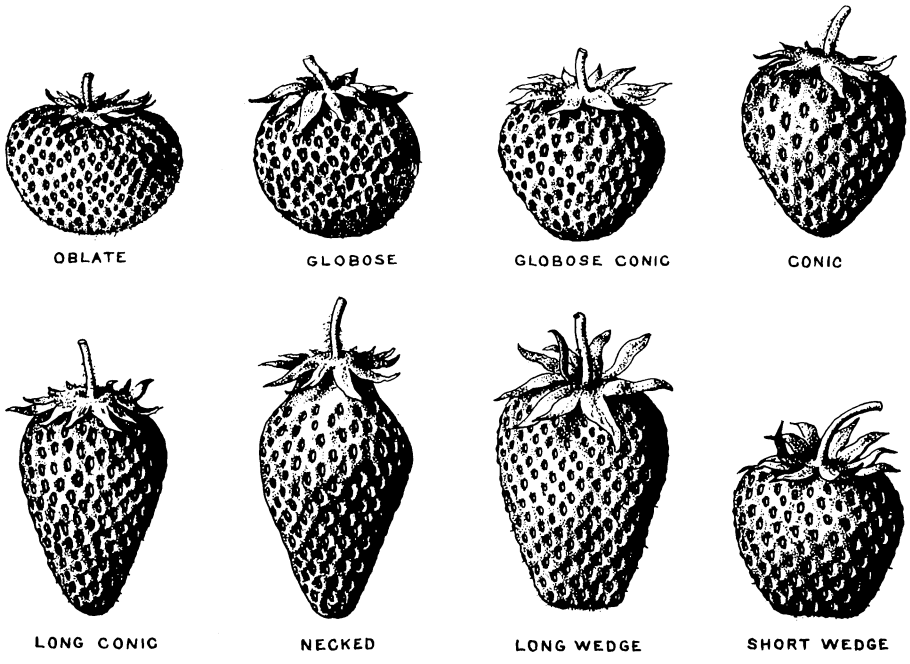
In the East, Earlidawn, Pocahontas, Blakemore, and Dixieland are the best, and Catskill, Sparkle, and Tennessee Beauty very good for preserving. In the Pacific Northwest, Marshall has attained a national reputation for preserves.

For the ice cream industry, medium-red fruit with a high flavor is desired. Marshall and Blakemore are preferred, although other varieties are used.

A large percentage of the strawberries packed for preserving and for the ice cream industry are grown in Oregon, Washington, and California because of low production costs and the steady supply of berries there. Varieties used are Northwest, Marshall, and Shasta. Also, in these States more berries are commercially frozen than in other areas.

Varieties for Freezing

Varieties that are to be frozen require deep-red, high-flavored fruit.



Shapes of strawberries.

Marshall, Northwest, Dixieland, Midland, Earlidawn, Sparkle, and Pocahontas are considered best. Siletz, Tennessee Beauty, Catskill, Midway, and Blakemore are above average for freezing.

Descriptions of Varieties

By referring to the descriptions that follow, and to table 1 (p. 12), growers can select varieties to suit their locality and purpose.

The varieties described are important and widely grown in at least one area or are tested and promising new varieties; some are grown for special purposes or particular areas. All are perfect flowering. Commercially important characteristics are mentioned. Following each name are place of origin and, where known, date of origin; where date of origin is unknown, date of introduction is given.

Albritton

North Carolina, 1945. Berries are large, uniform, conic, and very firm. Glossy skin is bright red, flesh is red to center, and seeds are on surface. Subacid. Excellent quality. Late. Plants are vigorous and make runners freely. Albritton is well adapted for freezing. It is not productive or fully hardy in Maryland and New Jersey but develops high flavor in North Carolina.

Arapahoe

Wyoming. Introduced 1954. Berries are medium size. Skin is tender and a rich glossy red. Flesh is red to center. Subacid. Very good dessert quality. Plants are vigorous and have good runner production for an everbearer. Arapahoe is extremely hardy, even in the Great Plains.

Armore

Missouri, 1938. Berries are large, irregular, and short wedge to blunt conic. Firmness is medium. Skin is yellowish red, and flesh is light. Good dessert quality. Late midseason. Armore has small cupped leaves that are subject to mildew and leaf spots. It is productive, runners freely, and grows best in heavy silt loam. Armore and Tennessee Beauty have replaced Aroma.

TABLE 1.—*Some characteristics of 35 strawberry varieties in the areas to which each variety is best adapted*

Variety	Plant characteristics [1]			Fruit characteristics [1]				
	Leaf spot resistance	Leaf scorch resistance	Response to virus	Season: Days after Midland	Size	Firmness	Dessert quality	Processing quality for freezing
Albritton	Resistant	Resistant		12	Large	Very firm	Excellent	Good.
Armore	Susceptible			10	Large	Medium	Good	Fair.
Blakemore	Resistant	Very resistant	Very tolerant	3	Small	Firm	Fair	Good.
Catskill	Susceptible	Partial	Very susceptible.	7	Very large	Soft	Good	Good.
Columbia			Tolerant	14	Medium	Medium	Fair	Fair.
Dabreak	Resistant			0	Medium	Medium	Good	Good.
Dixieland	Partial	Susceptible		3	Large	Very firm	Fair	Very good.
Dunlap	Susceptible		Tolerant	6	Medium	Soft	Very good	Fair.
Earlidawn	Resistant	Resistant	Susceptible	0	Large	Medium	Fair	Good.
Empire	Susceptible			8	Large	Soft	Very good	Fair.
Fairfax	Resistant	Resistant	Susceptible	6	Medium	Medium	Excellent	Fair.
Florida Ninety	Very susceptible.	Very susceptible.		5	Very large	Soft	Good	Good.
Fresno					Very large	Firm	Good	
Gem	Susceptible	Resistant		0	Small	Soft	Good	Good.

Headliner	Resistant			6	Large	Medium	Good	Good.
Howard 17 (Premier).	Resistant	Resistant	Tolerant	3	Medium	Soft	Good	Poor.
Jerseybelle	Susceptible	Susceptible	Susceptible	14	Very large	Soft	Fair	Poor.
Klonmore	Very resistant	Very susceptible.	Tolerant	3	Small	Medium	Fair	Good.
Marshall	Susceptible	Susceptible	Very susceptible.	7	Large	Soft	Excellent	Very good.
Midland	Resistant	Resistant	Susceptible		Large	Medium	Excellent	Good.
Midway	Susceptible	Susceptible		10	Large	Firm	Good	Very good.
Missionary	Resistant	Partial	Tolerant	5	Small	Medium	Fair	Good.
Molalla			Tolerant	15	Medium	Firm	Excellent	Very good.
Northwest			Tolerant	12	Medium	Medium	Very good	Very good.
Ozark Beauty	Resistant	Resistant		14	Medium	Medium	Very good	
Pocahontas	Partial	Resistant		6	Large	Medium	Good	Very good.
Redstar	Resistant	Resistant	Tolerant	18	Large	Medium	Good	Good.
Robinson	Partial	Susceptible	Tolerant	10	Large	Soft	Fair	Poor.
Shasta	Susceptible		Tolerant	7	Very large	Medium	Good	Good.
Siletz			Tolerant	0	Large	Medium	Very good	Very good.
Solana			Tolerant	12	Large	Medium	Good	Good.
Sparkle	Partial		Susceptible	12	Small-medium.	Soft	Very good	Very good.
Surecrop	Resistant	Resistant	Tolerant	5	Large	Firm	Good	Fair.
Tennessee Beauty	Resistant	Resistant	Tolerant	12	Medium	Firm	Good	Very good.
Tioga					Very large	Firm	Good	Good.

[1] Omission of a term indicates lack of opportunity to observe the characteristic.

Blakemore

Maryland, 1923. Berries are small, blunt conic, and firm. They have bright light-red skin and light-red flesh (that does not darken on holding), high pectin content, and are easy to hull. Acid. Fair dessert quality. Early. Plants are vigorous and make runners freely. They are highly tolerant to virus diseases, very resistant to verticillium wilt and leaf scorch, and resistant to leaf spots. Blakemore is especially desirable for preserving. It is a leading variety in the United States and grown on a wide range of soil types, in the region from Georgia to Virginia and westward to Oklahoma and southern Missouri.

Catskill

New York, 1923. Berries are very large, long conic, irregular, and not firm. Fruit is attractive and has bright-crimson skin and light-red flesh. Mildly subacid. Good dessert quality. Above average for freezing. Productive. Runners freely. Foliage is susceptible to leaf spots, and plants are sensitive to virus diseases. Catskill is recommended as a midseason variety for home use and local market, for a wide range of soil types from New England and New Jersey to southern Minnesota.

Dabreak

Louisiana, 1961. Berries large, very attractive. Subacid. Good dessert and preserving quality. Very productive. Early. Resistant to leaf spot. Now a leading variety in Louisiana.

Dixieland

Maryland, 1946. Berries are large, long blunt conic, very firm, and attractive. Skin and flesh are bright red. Acid. Fair dessert quality. Very good for freezing and preserving. Early. Foliage generally is healthy, but leaf scorch sometimes is severe. Plants make runners freely. Dixieland has been a promising variety for the Blakemore area. Variegation has made its future uncertain. Variegation-free stocks are being propagated.

Dunlap

Illinois, 1890. Berries are medium size, conic, and soft. They are dark crimson, and flesh is deep red. Subacid. Very good quality. Early to midseason. Free running. Plant is hardy, drought-resistant, and tolerant to virus diseases. Foliage is susceptible to leaf spots and leaf scorch. Dunlap adapts to a wide range of soil types but thrives on clayey soil. It is grown in northern Illinois, Wisconsin, Iowa, Minnesota, Nebraska, North Dakota, and South Dakota. Fruit is too soft to ship well and is grown chiefly for home use and local markets. Where Howard 17 (Premier) or Catskill are hardy, they have largely replaced Dunlap.

Earlidawn

Maryland, 1947. Berries are large, conic, somewhat irregular, medium firm. Good dessert quality. Very early. Berries have bright, light-red skin, glossy surface, and bright-red flesh. The plants blossom early and appear as blossom-hardy to frosts as Howard 17. Plants are productive, but make fewer runners than most varieties. Earlidawn is usually resistant to leaf spots and leaf scorch, but is susceptible to verticillium wilt. Earlidawn is adapted to Maryland and New England and west to Missouri as an early fresh market and freezing variety.

Empire

New York, 1940. Berries are large, attractive, and high flavored. Midseason to late. Productive. Very good dessert quality. Susceptible to leaf spots. Empire shows promise for northeastern areas but is too soft for Maryland and southward.

Fairfax

Maryland, 1923. Berries are medium size, attractive, and wedge to short blunt conic. Deep-red flesh is covered with brighter red skin. Berries turn dark if not picked and marketed promptly when they first ripen. Mildly subacid. Excellent dessert quality. Medium early. Foliage is resistant to leaf spots and leaf scorch, but plants are sensitive to virus diseases. Makes fewer runners than many other varieties. Plants are especially productive when late season runners are picked off. Fairfax is grown from southern New England to Maryland and westward to Kansas.

Florida Ninety

Florida, 1947. Berries are soft, irregular, and long conic. In Florida they are very large and second early. Good to very good dessert quality. Productive. Florida Ninety grows more runner plants than any other variety, but it is very subject to leaf spots and leaf scorch. It is the chief variety in Florida.

Fresno

California, 1955. Berries are large, firm, attractive. Caps easily. Adapted to Fresno, Calif., and the Santa Maria and Southern California areas.

Gem (Superfection, Brilliant)

Michigan, 1933. Berries are soft, small, and irregular short wedge to oblate shape. Surface is a glossy deep red, and center is paler red. Acid. Good dessert quality. Gem is susceptible to leaf spots and resistant to leaf scorch. It is the leading everbearer.

Headliner

Louisiana, 1957. Berries are large, blunt conic, medium red, medium firmness. Mildly subacid. Midseason. Good dessert quality. Plants are vigorous, productive, make runners freely, and are resistant to leaf spots. Not adapted in Central or Northern States.

Howard 17 (Premier)

Massachusetts. Introduced 1909. Berries are medium size, long conic, and good quality. Both skin and flesh are red. Subacid. Early with long season. Fruit is not firm enough to ship to distant markets. Plants are productive and generally make runners freely. Howard 17 is resistant to leaf diseases and is highly tolerant to virus diseases. It has been widely grown in the North, but has been largely replaced by Catskill, Sparkle, and Earlidawn.

Jerseybelle

New Jersey, 1955. Berries very large, blunt conic, soft, very glossy, medium red, Mild flavor. Late. Not adapted to freezing, Large plants, medium number of runners, susceptible to leaf spot, leaf scorch, red stele, and verticillium wilt. Productive from southern New Jersey northward. Noted for its large, showy, and attractive fruits.

Marshall

Massachusetts, 1890. Berries are large, irregular, soft, and round conic to conic. Skin is deep crimson, and flesh is light red. Mildly subacid. Midseason. Drought-resistant. Standard of excellence in dessert quality, very good for preserving, and preferred for the ice cream industry. Susceptible to leaf spots, very sensitive to virus diseases. but still grown on higher elevations in western Oregon and western Washington for freezing.

Midland

Maryland, 1929. Berries large, round conic, irregular, and high flavored. Firmness is medium. Glossy surface and flesh are deep red. Very early. Mildly subacid. Midland has very good to excellent dessert fruit and freezes very well. Plants are productive but make fewer runners than most varieties. Midland usually is resistant to leaf spots and leaf scorch but is sensitive to virus diseases. It yields well when irrigated and grown in fertile soil or in the hill system. It is popular from southern New England to Virginia and west to Iowa and Kansas.

Midway

Maryland, 1951. Berries are long conic, firm fleshed, tough surfaced, glossy rich red. Fruit is medium to large in size. Late midseason. Good dessert quality, subacid. Very good for freezing. Plants make runners freely. Not so resistant to drought as some varieties. Plants resistant to red stele, susceptible to leaf spots and leaf scorch and to verticillium wilt. The leading variety in Michigan and very productive in all Northeastern States.

Missionary

Virginia, 1900. Berries are small to medium size, conic, and dark crimson. Flesh is deep red. Fruit is soft to firm according to the section in which it is grown. Acid. Fair to good quality. Early. Foliage is fairly resistant to leaf spots. Plants runner freely. Florida-grown berries are firm, attractive, excellent for shipping, and good for freezing. Missionary has been largely replaced by the more productive Florida Ninety in Florida.

Northwest

Washington, 1941. Berries are medium size, uniform, and long blunt conic. Firmness is medium. Glossy surface is bright crimson. Flesh is red. Subacid. Very good dessert quality. Very good for freezing. Late. Plants are tolerant to virus diseases but susceptible to leaf spots. Northwest ripens about 1 week after Marshall and has largely replaced it in Washington and Oregon.

Ozark Beauty

Arkansas. Introduced 1955. Berries large, sweet, good flavored. Everbearing. Productive on mother plants, not on runner plants, in summer and fall.

Pocahontas

Maryland, 1946. Berries are large, attractive, and blunt conic. Firmness is medium. Skin is bright medium red. Flesh is red. Subacid. Good dessert quality. Second early. Very good for freezing. Foliage generally is resistant to leaf scorch and partially resistant to leaf spots in South. Plants are vigorous and make runners freely. Pocahontas is a productive new variety for the northern Blake-

more area, from Norfolk, Virginia, to southern New England and to Missouri.

Premier

Another name for Howard 17.

Red Rich

Minnesota, 1938. Berries are large to small, very irregular, and short conic. Color is an attractive rich red. Subacid. Excellent flavor. Everbearing. Foliage is resistant to leaf spots and leaf scorch. Red Rich is adapted to Northern States. Makes few plants.

Redstar

Maryland, 1931. Berries are large, irregular, blunt conic, and medium red. Firmness is medium. Subacid. Good to very good dessert quality. Very late. Leaves are large and resistant to leaf spots and leaf scorch. Plants are tolerant to virus diseases and make runners freely. Redstar is one of the better late varieties grown from Maryland to southern New England and west to Missouri and Iowa.

Robinson (Kardinal King, Scarlet Beauty)

Michigan, 1932. Berries are large, soft, conic, and red. Flesh is lighter red. Late. Mild flavor. Not adapted to freezing. Plants are small and make runners very freely. They are partially resistant to leaf spots, susceptible to leaf scorch, and tolerant to virus diseases. Robinson is noted for its productivity and large showy berries. It is rapidly being replaced by firmer, better-flavored varieties, especially by Midway.

Rockhill (Wazata)

Iowa, 1918. Berries are irregular and round conic to short wedge shaped. Firmness is medium. Skin is bright rich red, and flesh is light red. Subacid. Excellent quality. Everbearing. Foliage is dark green and healthy. Plants make few runners and may be propagated by crown division. Rockhill is grown in Oregon, Minnesota, Iowa, and other northern States for its large size, attractive appearance, and excellent flavor.

Shasta

California, 1935. Berries are very large and round conic. Firmness is medium. They have light-red skin, pale flesh, and yellow seeds. Mild subacid. Good dessert quality. Midseason. Shasta runners freely. Plants are vigorous and tolerant to virus diseases, but foliage is subject to leaf spots in Eastern States. Shasta is the leading variety of California; near the coast it yields berries continuously from April to November. It is also grown in Oregon and Washington.

Siletz

Oregon, 1947. Berries are medium in size, blunt conic, dark red, and soft. Very good dessert quality. Plants make runners very freely where adapted. Siletz is adapted to the Pacific Northwest. Resistant to red stele.

Sparkle (Paymaster)

New Jersey, 1931. Berries are short blunt conic to oblate, soft, and glossy rich red. Fruit is usually medium size but sometimes small. Mildly subacid. Very good dessert quality. Very good for freezing. Plants make runners freely. Sparkle is resistant to one strain of red stele disease, partially resistant to leaf spots, and susceptible to virus diseases. It is a productive late variety for the Northeastern States west to Wisconsin.

Surecrop

Maryland, 1950. Berries large, round conic, irregular, firm. Glossy surface, medium red exterior, and light red interior. Ripen early. Good dessert quality. Subacid. Plants large, make many runners. Resistant to several races of red stele, to verticillium wilt, leaf spots, leaf scorch, and drought. Plants spaced 6 to 9 inches apart are productive.

Tennessee Beauty

Tennessee, 1933. Berries are attractive, uniform, medium size, and long conic. Color is a glossy medium to deep red. Mildly subacid. Good dessert quality. Good freezing quality. Late midseason. Large caps. Runners freely. Plants are resistant to leaf spots and leaf scorch and are tolerant to virus diseases. Because of its productivity, firmness, color, and flavor, Tennessee Beauty is a leading variety in the Missouri to Maryland area.

Tioga

California, 1955. Berries largest in California. Attractive, firm, cap easily. Very productive, widely adapted in coastal California.

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